



THE NEWSLETTER OF THE U.S. SECTION, PIANC

International Navigation Association

Winter 1998/1999

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Notes From The Secretary

- The 29th International Navigation Congress --the final Congress of the 20th Century-- was held in The Hague, The Netherlands, from 6-11 September 1998. The Chairman of the Dutch Organizing Committee, **Mr. Henk Schroten** and the other members of the committee did an outstanding job with all arrangements for the Congress. Navigation and intermodal transportation systems was the theme of the Congress. Conclusions of the technical sessions will be published in the next issue of the PIANC Bulletin. The U.S. delegation, which was headed by **The Honorable Joseph W. Westphal, Ph.D.** and **Major General Russell L. Fuhrman**,



Claude Strauser, Chief of Potamology Section, U.S. Army Engineer District, St. Louis, delivering paper which was co-authored by Major General Robert B. Flowers, Mr. David Busse, and Mr. Strauser, 29th International Navigation Congress, The Hague, 9 September 1998.

included 27 other representatives many of whom were accompanied by their wives. The U.S. Section was represented by

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Dr. Dennis P. Robinson, U.S. Army Institute for Water Resources, Navigation Division, who was a co-author of a paper entitled, *Returns to Investment in Navigation Infrastructure: An Equilibrium Approach*, which he presented at the 29th International Navigation Congress in The Hague. Dr. Harry Kelejian, University of Maryland, Department of Economics, co-authored this paper.

papers and speakers in eight of the ten technical sessions. In addition, **Dr. Dennis P. Robinson**, who is with the U.S. Army Engineer Water Resources Support Center, presented an individual paper entitled, *Returns to Investment in Navigation Infrastructure: An Equilibrium Approach*. Copies of Congress Papers may be purchased from the Secretariat. Information will appear in the next issue of the Bulletin. Members of the Section who would like to obtain one or two copies of papers may contact the Office of the U.S. Section for further information.

- Mark your calendars for the 30th International Navigation Congress which

will be held in Sydney, Australia, early in September 2002. The Institute of Engineers, Australia has established an organizing committee with **Mr. Greg Martin**, Sydney Ports Corporation as Chairman. As additional information becomes available to the U.S. Section, it will be included in future issues of the newsletter.

- The Permanent International Commission (PIC) approved new *Statutes* at the meeting on 6 September 1998 in The Hague. There is a significant change to Article 7 which has been rewritten to remove the requirement that the President be a Belgian. Many member Sections supported the new wording which makes it possible for the President of the International Navigation Association to be chosen from any member nation. Opposition to the change lead by the Belgian Section, strongly supports maintaining the requirement that the President be a Belgian. Since its inception the President of PIANC has been a Belgian. The government of Belgium, and currently the Ministry of the Flemish Community of Belgium, provides significant financial support to PIANC, support which is appreciated by all national sections. It is expected that the new president who will take office in May 1999 will be a Belgian. For the future the *Statutes* will be supplemented with by-laws which establish the process for electing the president.
- In the *Summer* issue of the Newsletter, we announced the resignation of **Mr. Anson G. Eickhorst** and **Mr. Thorndike Saville, Jr.** as representatives to PIANC's international committees that manage the technical working groups. Those vacancies have been filled by volunteer members to whom we extend a warm welcome. It is a pleasure to announce the appointment of three new representatives of the U.S.

Section. The representative to the Permanent Technical Committee I (PTC I), Inland Waterways and Ports, is **Dr. Sandra K. Knight**, Chief, Navigation Branch, U.S. Army Corps of Engineers, Waterways Experiment Station. The U.S. Representative for Maritime Ports and Seaways, Permanent Technical Committee II (PTC II), is **Mr. Thomas H. Wakeman, III**. He is Dredging Program Manager, Port Commerce Department, the Port Authority of New York and New Jersey. In addition, the U.S. Section has appointed **Dr. Roberta E. Weisbrod**, Partnership for Sustainable Ports, as the Principal Representative to the Permanent Environmental Commission (PEC). It is a position that had previously been filled by **Dr. Robert M. Engler**, Director, Center for Contaminated Sediments, U.S. Army Waterways Experiment Station, who was both the U.S. Representative and International Chairman of the PEC. **Dr. Engler** continues to serve as Chairman of the PEC.

- Another retirement, that of **Mr. Charles C. Calhoun**, has left the U.S. Section Publications Committee without a Chairman. **Mr. Calhoun**, who retired on 2 January 1999 after 35 years with the U.S. Army Waterways Experiment Station, has served as Publications Committee chair for 15 years. A announcement about the vacancy was sent to the membership in December. A new chairman will be selected in the near future.
- At the Council meeting held on 6 June 1998, the Commission for Communication was established with **Mr. Eric Van den Eede**, Head, Division of the Upper-Scheldt of the Ministry of the Flemish Community of Belgium, as Chairman. The Commission has a potentially very important role as it focuses on the future of the association; cooperation with other non-governmental

organizations; reaching individuals and corporations that can benefit from PIANC technical information; and developing electronic communications for PIANC. Representing the U.S. Section is **Mr. Barry Holliday**, Chief, Dredging and Navigation Branch, Directorate of Civil Works, U.S. Army Corps of Engineers. The next meeting of the Commission for Communication will be in Brussels on 21-22 January 1999.

- On 1 September 1998, a letter signed jointly by **Dr. Westphal**, Chairman, and **Major General Fuhman**, President, U.S. Section, PIANC, was sent to Chief Delegates and Secretaries of national sections. The subject of the letter is visits to the United States. The Chairman and President invited members of other national sections who are planning to visit the United States to notify the Office of the U.S. Section which would arrange visits with members in U.S. cities that the PIANC member would be visiting. Members who would like a copy of the letter may submit a request to the Office of the U.S. Section.

The PIANC International Secretariat has announced an increase in dues which will begin on 1 January 1999. The new dues structure is as follows: Large Corporate Member \$695.00; Small Corporate Member \$350.00; Individual Member \$70.00; and Student Member, which will remain unchanged, at \$15.00.

- Congratulations to **Mr. Harry Cook**, President of the National Waterways Conference (NWC), Inc. and a long time member of PIANC for being awarded the *National Achievement Award of the Rivers Hall of Fame*. **Mr. Charles Lehman**, Commissioner, U.S. Section of PIANC, and others spoke at the installation of **Mr. Cook** at the NWC dinner on 17 September 1998.

- The Office of the U.S. Section would be pleased to receive from any member an article for publication in the newsletter that would be of general interest to other members. We would also like to hear from you about experiences using PIANC technical working group reports.

Dennis Morgan Addresses National Waterways Conference

Dennis Morgan, a civil engineer with more than 25 years of service at the U.S. Army Corps of Engineers St. Louis District, was the key speaker at the National Waterways Conference PIANC Breakfast held September 24, 1998, in New Orleans, Louisiana. A certified photogrammetrist, Mr. Morgan has over 10 years of experience in aerial photography, surveying, mapping and contracting of these services. He is currently responsible for the technical management of all aerial photography and mapping projects within the St. Louis District as well as all



photogrammetric mapping projects contracted for other government agencies and other Corps districts. The Technical Center of Expertise for Photogrammetric Mapping at St. Louis District is currently testing the use of airborne thermal cameras for early detection of weaknesses in levees to prevent breaks during flooding.

NOAA Creates Inland Waterways Electronic Chart Database

The National Oceanic and Atmospheric Administration's (NOAA) Office of Coast Survey is collecting and compiling existing data from the U.S. Army Corps of Engineers and USCG to create an inland waterways electronic chart database. This data will be combined into an Electronic Navigational Chart (ENC) in an internationally accepted format.

The Coast Survey has also committed to maintaining the database and issuing updates. Still in the prototype phase, the database will initially cover only the lower portion of the Mississippi River. Prototype goals include testing how the data will be compiled and formatted, establishing the costs involved, and collecting pertinent feedback from users.

The U.S. Army Corps of Engineers MVD REEGIS database will supply most of the data for the ENC database. The Office of Coast Survey is also seeking data from potential river database customers, including pilots and river carriers. The inland waterway community response has been very supportive of NOAA's database concept.

POC is Lieutenant Commander Tod Schattgen, NOAA, (573) 659-8154, e-mail: Tod.Schattgen@noaa.gov

Update on St. Louis District Lock Automation

In an innovative attempt to reduce operating costs, the Kaskaskia Lock and Dam Remote Control Study tested the concept of remotely operating Kaskaskia from the Melvin Price Lock and Dam. The goal was to continue operation at Kaskaskia on a reduced operating budget, 7 days per week, 24 hours per day. The study was prepared by a multi-disciplinary team that included representatives from the affected union, lock operations and maintenance, engineering, project management, and the St. Louis District safety, security, and legal offices.

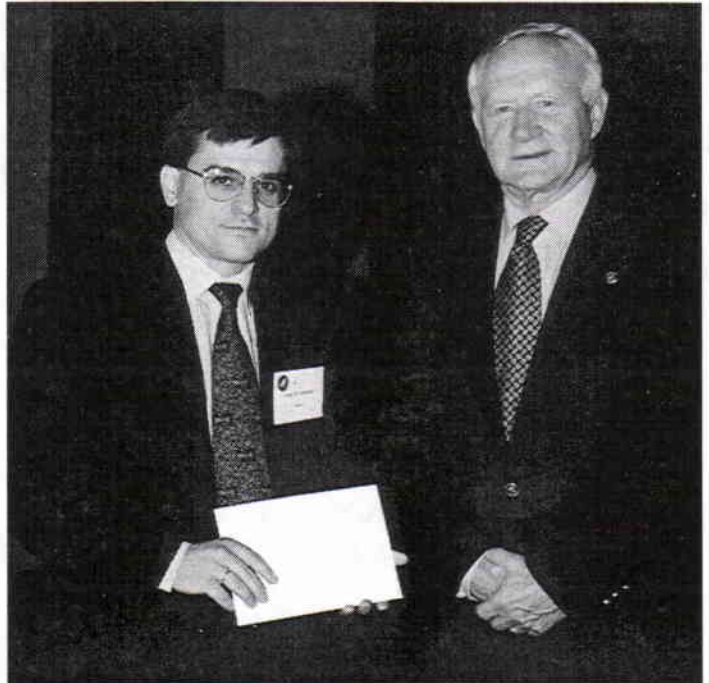
No technical obstacles to implementing lock automation were found during the study, and all necessary equipment is readily available. However, communication costs relating to distance and the closed circuit television system remain high and significantly impact current economic benefits. The study projects average annual savings at Kaskaskia of about \$16,000 with the potential for savings up to \$66,000 at the end of its equipment design life. In addition, the design includes enhancements to operation whose benefits are difficult to quantify. With remote control, the government's role in maintaining and operating Kaskaskia increases because of additional equipment that requires inspection and maintenance. Lock operators would also be responsible for simultaneous control of more than one lock.

Nevertheless, the study concludes that remote control has the potential to reduce operational costs at low-volume locks and dams. It recommends that the Kaskaskia Lock

and Dam be designated as a demonstration project to further define and develop the concept of remote control. POC is Mike Sommars, (314) 331-8279.

Iribarren of Spain Wins Top Prize

The 1998 Gustave Willems Award went to Jose R. Iribarren of Spain, who is Head of the Technical and Scientific Program, CEDEX (Port and Coastal Research Center) Ministry of Public Works. The title of his paper was "Determining the Horizontal Dimensions of Ship Maneuvering Areas - General Recommendations and Simulator Studies." Part I of the paper described conceptual design, and Part II was a case study of the Port of Aviles, Spain. Mr. Iribarren received an all-expense paid trip to attend the 29th International Congress in The Hague, where he presented his paper on 10 September 1998.



Mr. Jose R. Iribarren and Mr. Robert DePaepe, President, International Navigation Association

Attention U.S. Maritime Data Users!

Effective October 1, 1998, the Office of Management and Budget (OMB) transferred the U.S. Foreign Waterborne Transportation Statistics program from the U.S. Bureau of the Census to the U.S. Army Corps of Engineers.

The Corps will be operationally supported by the Maritime Administration (MarAd). The Corps and MarAd will produce the official monthly and annual U.S. foreign waterborne transportation statistics. Under the new arrangement, monthly and annual vessel movement reports and cargo reports previously produced by Census Bureau will continue. These reports contain movement data on all U.S. vessels engaged in U.S. foreign trade and cargo data by type of service, U.S. and foreign port, country of origin/destination, commodity, value, weight and containerized cargo.

MarAd will provide distribution and special query services for all government agencies (except the Corps) and the private sector. Information on these statistics and special requests may be obtained from the Office of Statistical and Economic Analysis (attention Norman Tague), U.S. Maritime Administration, 400 Seventh Street, S.W., Washington, DC 20590, Tel: (202) 366-2316, FAX: (202) 366-8886. Please direct Corps requests or programmatic inquiries to Ms. Susan Hassett, Waterborne Commerce Statistics Center, (504) 862-1453, FAX: (504) 862-1423.

Administration Proposes Repeal of Harbor Maintenance Tax

The Harbor Maintenance Tax (HMT) was established by Congress in the Water Resources Development Act of 1986. The HMT was assessed on the value of cargo and paid for by shippers. The March 31, 1998,

decision by the Supreme Court in *U.S. Shoe Corp. v. The United States* found the HMT unconstitutional as applied to exports. Collection of the ad valorem tax on exports was halted on April 25, 1998. The HMT has also been the subject of questions raised by U.S. trading partners. The U.S. is currently engaged in consultations under the World Trade Organization Agreement regarding a claim by the European Union, Japan, Canada and Norway that the HMT violates the General Agreement on tariffs and trade.

The Administration is proposing that the HMT be repealed as soon as practical and replaced by a user fee (called the Harbor Services User Fee or HSUF). This fee should satisfy the Supreme Court's constitutionality test and be consistent with U.S. international obligations. The HSUF is to be formulated on a nationwide system basis so as not to significantly alter the existing competitive balance among U.S. ports, nor measurably impact U.S. international and domestic trade.

The HSUF is to be paid by the primary users of Federal channel and harbor projects, namely the commercial vessel operators. The operational characteristics of particular vessel categories, ship size, and movement frequency were the principal factors used to measure the provided services. Vessels are divided into four service categories, General, Bulker, Tanker vessels, and Cruise ships, based on differences in the level of service they require. Size is measured by the vessel's net tonnage for all vessels but containerships and cruise ships, where gross tonnage was used as a proxy for cargo and passenger space not included in net tonnage. Frequency is counted on every trip into or out of U.S. ports through Federal channels, except for the General and Cruise vessel categories, where the fee would be imposed on a per voyage basis. This recognizes the fact that most General and Cruise category vessels usually stop in several U.S. ports on any given voyage.

The HSUF revenues would be placed in a budget category called the Harbor Services Fund (HSF), which would be a new category of discretionary spending. Activities that would be funded from the HSF, subject to appropriation, would include 100 percent of the Corps' Operations & Maintenance (O&M) expenditures for Federal channel and harbor projects; 100 percent of the St. Lawrence Seaway Development Corporation; the Federal share of construction expenditures for Corps channel and harbor development projects; and a few miscellaneous costs. Expanding the uses of fee revenues to include Federal port construction projects recognizes that the services provided by the U.S. port system require adequate and continual investment in new construction. A bill proposal has yet to be submitted to Congress.

POC is Raleigh Leef, U.S. Army Corps of Engineers Civil Works, Policy Division, (202) 761-0116.

Japan-United States Seminar on River Engineering Technologies

Three employees from the U.S. Army Corps of Engineers recently participated in a technical exchange program in Tokyo, Japan. The theme of this seminar was "American Rivers into a New Millennium." Steve Cobb, MVD, Michael Dace and Claude Strauser, MVS, presented a series of lectures on navigation and flood control technologies and innovations. Japanese engineers from the Japanese River Bureau, Ministry of Construction, the Japan Institute of Construction Engineering and the Water Resources Development Corporation attended the seminar. The team of Americans made trips to ongoing construction projects and observed many engineering projects already in operation.

This was the first technical exchange in a planned long-term relationship between Japan and the United States. It is the result of discussions and a technical exchange that started in 1993 when a Japanese delegation visited the Mississippi Valley Division and HQUSACE. Arrangements for a long-term technical exchange program were formally established by a 1997 letter from Major General Robert B. Flowers to the Japanese Water Resources Corporation. It is hoped that a team of Japanese engineers will visit the United States next year and present a similar seminar on the latest technological innovations on water resource related topics.

POC is Claude Strauser, St. Louis District, 314-331-8341

Partnering: Corps Meets with Coastal Consultants

On May 12, 1998, the Coastal Engineering Research Board of the U.S. Army Corps of Engineers conducted a partnering workshop in Florida with private consulting engineers. The purpose was to discuss how the United States could become more competitive in the international coastal engineering market for work such as modifying ports, beach fills, navigation channels, and dredged material replacement.

The 75 participants identified 4 major obstacles to accomplishing their goal: marketing, up-front financing for Corps work, liability/risk-sharing, and responsiveness. Legislative authorities which allow the Corps and private industry to support each other are little known and need to be advertised more. To support U.S. firms, the Corps can use Technical Assistance Agreements and Cooperative Research and Development Agreements. However, new legislation is needed to help the Corps assist private companies in up-front activities such as

proposal development. Also, since the Corps cannot presently be held liable for its deliverables, "equal" partnering with the private sector is not possible.

The private sector participants asked the American Consulting Engineers Council to form a committee with the Corps to work towards new legislation that would make the Corps more attractive for international work and for partnering.

Another meeting was held on October 29, 1998 in Washington, D.C., to further discuss overcoming the obstacles to successful partnering. A committee is now being formed to work out solutions acceptable to all concerned.

POC is Charles Chesnutt, Coastal Engineer at Corps Headquarters, (202) 761-1853.

Mat Sinking Program Fights Battle Against Mother Nature

(The following article is a news release of the U.S. Army Corps of Engineers Vicksburg District.)

Vicksburg, Miss.-- At high stages, the Mississippi River is a formidable, dangerous opponent, capable of washing away civilization were it not for massive, effective flood control measures.

At lesser stages, the river can be a stealth, cancer-like enemy of man and beast alike. Twisting in its unsettled alluvial bed, the Mississippi is capable of wiggling across 90 miles of Delta landscape, easily claiming towns, cities and infrastructure in its search for a shorter route to the Gulf. In its most benign form, the river gobbles up thousands of acres of productive land and wetlands annually.

Man's first line of defense in this ageless campaign is a web of concrete being placed on

the river's banks to stop its uncontrolled movement. Manning the front line is the U.S. Army Corps of Engineers' mat sinking unit, 300 men and women working rain or shine, hot or cold, to put concrete handcuffs on one of the world's mightiest rivers.

Through December, articulated concrete mattresses, or mats, will be placed along dozens of problem areas in 950 river miles between Cairo, Illinois, and the river's mouth below New Orleans.

"Revetment stabilizes the bank line and provides an armor that protects it from the erosive currents of the river," said Dennis Norris, Chief of River Operations for the Corps' Vicksburg District.

Once woven of willow, the mats have been cast of concrete, wired together and guided into place by man and machine since 1917. Measured in squares, they are 4 feet long and 25 feet wide.

"The easiest way to describe it would be a large concrete blanket," Norris said, "which is placed not only on the bank but also out into the river's bottom. Without the mat, the river would be unconstrained and eventually develop such a severe bend that navigation would be difficult at best, and it could cut a new channel, disrupting the entire region." The very existence of cities like New Orleans and Baton Rouge would be threatened in addition to smaller river cities in the Mississippi Valley.

The process of laying mat has become highly specialized over the past century. Even with a \$30-million price tag, the mat can be placed as cheaply as carpet at home. Norris credits success of the precision work to the mat sinking operation's 300 crew members, who work 10-hour shifts for 12 days on, 2 days off. "It's something we've been doing a lot of years," he said. "Some of our folks have been

working out here for 40 years or more and they take a lot of pride in what they do."

Especially gratifying was last year's record-setting yield. "We sank over 5,000 squares in one 10-hour day, which equates to about 11 and ½ acres of concrete," Norris said, adding that the record is unique "because this is the only sinking unit in the world."

River scientists from around the world come to study this highly-specialized marvel, but its major application to date seems to be the Mississippi River.

Labor intensive as a beehive and hazardous, the task's challenges are also met by technological advances. Surveying, for instance, has been revolutionized by the Global Positioning System (GPS), using a satellite to give river coordinates. Other upgrades in the last 5 to 10 years have improved communication, Norris said. "Now we have e-mail capability with the unit on the river, via satellite."

And how do you feed, house and care for 300 people in the middle of nowhere? The unit is totally self-sufficient, resembling a floating city. "We've built several quarterboats to increase the size of the rooms and the comfort for the crew," Norris said. Accommodations now feature digital satellite TV, lounges and an expanded galley. "We generate all our own power, make our own water and operate our own sewage treatment plants. We're basically self-sufficient."

Revetment, when combined with dikes and dredging, is a cost-effective method of flood control and navigation on the river. "Our job is to keep the river open and provide a safe navigation channel, and do it in an environmentally-sensitive manner for our customers. The customers we serve are not just those in the navigation/recreation/flood control areas, but all taxpayers who enjoy the

economic benefits the Mississippi River brings to our country," he said.

POC is Patty K. Elliott, Media Services Coordinator, (601) 631-5053.

Handling and Treatment of Contaminated Dredged Material from Ports and Inland Waterways, "CDM," Volumes I and II

by Charles W. Hummer, Jr.

PIANC continues to demonstrate its leadership in developing sound and timely technical publications related to navigation in general and specifically to the environmental aspects of dredging. The current publication includes the earlier Volume I and augments that with Volume II, all employing a state-of-the-art CD-ROM format. In keeping with PIANC literature tradition, the text contained on the CD-ROM is both in English and French, although Volume II is only available in English on the version reviewed. This method of presentation truly marks a milestone in the technical literature for dredging, and is, perhaps, ahead of many other engineering disciplines.

The CD-ROM uses a media friendly software (Folio Views 4.11 for Windows) allowing the user to display the text on any Windows-based computer platform. The software states that it requires the following minimum requirements:

- Windows 3.1, Windows 95, or Windows NT
- 486 Processor
- 4MB Ram
- 2 MB Disk Space

The software displays the text in large readable fonts, and scrolling through the text is a pleasant experience. Furthermore, Volume II is a completely searchable database of 86

Technology Fact Sheets and 18 Case Studies containing much of the technical information and sources of technologies and international experiences in dealing with contaminated dredged material.

This report, as was the case of the earlier report, Volume I, was produced by an international Working Group convened by PIANC. Members of the Working Group represent a number of countries and are acknowledged experts in the subject under consideration. This report completes the final stages of a four-year comprehensive assessment of the handling and treatment of contaminated dredged material.

Volume I also provides a general framework outlining the case-by-case approach to assessment and selection of handling and treatment of CDM from ports and inland waterways. The Working Group's goal was to develop a fully consistent and logical technical approach that could be applied within the context of any of the countries' navigation and environmental regulatory programs.

However, to be able to use the Contaminated Dredged Material Technical Framework (CDMTF) presented in Volume I of the report, the designer needs more practical information. This information, or at least a reasonable portion of it, has been developed and compiled into Volume II of this report. Volume II contains much of the technical information and sources of technologies and experiences in dealing with CDM. Where practical, there is a direct link between the general material presented in Volume I with the more technical sources of information provided in Volume II.

While the emphasis of the report is on contaminated dredged material from maintenance dredging of ports and inland waterways, it also recognizes capital dredging

and remediation of contaminated sediment and soil adjacent to the navigation channels.

There is no question that for anyone even remotely involved with contaminated sediments, this work is a major and essential acquisition. PIANC has truly outdone itself with the comprehensiveness and innovativeness contained in this publication.

While the basic subject matter is extremely relevant and represents a significant contribution to the literature, the use of computer-based technology to present and promulgate the information is also historical. It would be surprising if this publication does not go down as the most demanded publication ever produced by PIANC.

Publication may be obtained from:
U.S. Section, PIANC
7701 Telegraph Road
Alexandria, VA 22315-3868

(Reprinted with permission from Terra and Aqua, June 1998.)

New Members of PIANC

New Individual Members

Amores, Aurora F.
Crampton, Walter F.
Dickenson, Stephen
Holliday, Barry W.
Raul Rios J.
Srinivas, Rajesh

New Corporate Member

NTNU/Norway

INSIDE PIANC

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|-------------|--|--------------------|
| 18 Feb 1999 | PIANC Permanent Commission for
Sport and Recreation
Navigation Committee Meeting
POC: Richard Dornhelm
TEL: (510) 944-5411 | Ft. Lauderdale, FL |
| 12-14 May | 1999 U.S. Section Conference
POC: Mary Jane Robertson
TEL: (703) 428-6286 | Memphis, TN |

OUTSIDE PIANC

- | | | |
|----------------|---|---------------------|
| 15-17 Feb 1999 | ICOMIA Third International
Marina Conference
POC: Ron Stone, IBFC, Chairman
c/o NMMA Washington, Harbour
3050 K Street, NW, Suite 145
Washington, D.C. 20007
TEL: (202) 944-4985
FAX: (202) 944-4988 | Ft. Lauderdale, FL |
| 10-12 Mar 1999 | International WorkBoat Show,
Shallow Draft Marine Exposition
TEL: (65) 278 8666
FAX: (65) 278 4077 | Singapore |
| 21-23 Apr 1999 | International Congress on Maritime
Technological Innovations and Research
TEL: +34 3 401 79 32
FAX: (93) +34 3 401 79 23 | Barcelona, Spain |
| 16-20 May 1999 | WEDA XIX
The Last Great Dredging Conference
of the 20th Century
Exhibits TEL: (360) 750-0209
FAX: (360) 750-1445 | Louisville, KY |
| 26-28 May 1999 | Oresund Link
Dredging & Reclamation Conference
TEL: +45 33 41 63 00 | Copenhagen, Denmark |
| 1-4 Jun 1999 | International Conference
Monitoring and Control of Marine
and Harbour Structures
POC: A. Del Grosso
TEL: +39.10.3532525
FAX: +39.10.3532534 | Genoa, Italy |
| 7-10 Jun 1999 | American Society of Civil Engineers
"Coastal Structures 99"
POC: Nobuhisa Kobayashi,
University of Delaware
TEL: (302) 831-8044 | Santander, Spain |

OUTSIDE PIANC (Continued)

23-25 Jun 1999	PACON 99 Regional Symposium on Humanity and the World Ocean TEL: (808) 956-6163 FAX: (808) 956-2580	Moscow, Russia
22-27 Aug 1999	28th Biennial Congress of the International Association for Hydraulic Research POC: Heinz Bergmann TEL: +43-316-873-6264	Graz, Austria
8-10 Sep 1999	Breakwaters '99 First International Symposium on Monitoring of Rubble Mound Breakwaters Sponsored by PIANC, PTC II, Working Group 39 POC: Orville T. Magoon TEL: (707) 987-0411	Madison, WI
12-16 Sep 1999	International Harbour Congress POC: Ms. Rita Peys TEL: +32.3.216.09.96 FAX: +32.3.216.06.89	Antwerpen, Belgium
22-23 Sep 1999	Coastal Management 99 Conference on Integrating Science, Engineering and Management POC: Rachael Coninx TEL: +44 (0)171 665 2314 FAX: +44 (0)171 233 1743	Bristol, United Kingdom
18-19 Nov 1999	CEDA Dredging Days Europort 99 Exhibition POC: Marijn Legemaat TEL: +31 (0)20 549 12 FAX: +31 (0)20 646 44 69	Amsterdam, Netherlands
5-9 Jun 2000	PACON 2000 Ninth Pacific Congress on Marine Science and Technology TEL: (808) 956-6163 FAX: (808) 956-2580	Honolulu, Hawaii
16-21 Jul 2000	27th International Conference on Coastal Engineering	Sydney, Australia